- **Class E** (Electrical). Class E helmets provide the highest level of protection against electrical hazards, with high-voltage shock and burn protection. Test samples are proof-tested at 20,000 volts (phase to ground).
- **Class C** (Conductive). Class C helmets are not intended to provide protection against contact with electrical conductors.

*Note: Proof-test voltages for Class G and E helmets are not intended to be an indication of the voltage at which the headgear protects the wearer, but only the level at which they are tested.*

Another class of protective headgear on the market is called a "bump hat," designed for use in areas with low head clearance. Bump hats are recommended for areas where protection is needed from head bumps and lacerations. They are not designed to protect against falling or flying objects and are not ANSI approved.

It is essential to check the type of hard hat employees are using to ensure that the equipment provides appropriate protection. Each hat must bear a label inside the shell that lists the manufacturer, the ANSI designation, the date of manufacture, the type and class of the hat, and the approximate headband size range.

## *Size and Care Considerations*

Head protection that is either too large or too small is inappropriate for use, even if it meets all other requirements. Protective headgear must fit appropriately on the body and for the head size of each individual. Most protective headgear comes in a variety of sizes with adjustable headbands to ensure a proper fit (many adjust in ⅛-inch increments). A proper fit should allow sufficient clearance between the shell and the suspension system for ventilation and distribution of an impact. The hat should not bind, slip, fall off or irritate the skin.

Periodic cleaning and inspection will extend the useful life of protective headgear. A daily inspection of the hard hat shell, suspension system and other accessories for holes, cracks, tears or other damage that might compromise the protective value of the hat is essential. Paints, paint thinners and some cleaning agents can weaken the shells of hard hats and may eliminate electrical resistance. Consult the helmet manufacturer for information on the effects of paint and cleaning materials on their hard hats. Never drill holes, paint or apply labels to protective headgear as this may reduce the integrity of the protection. Do not store protective headgear in direct sunlight, such as on the rear window shelf of a car, since sunlight and extreme heat can damage them.

Hard hats with any of the following defects should be removed from service and replaced:

- Perforation, cracking, or deformity of the brim or shell;
- Indication of exposure of the brim or shell to heat, chemicals, or ultraviolet light and other radiation (such as chalking, flaking or loss of surface gloss).

Always replace a hard hat if it sustains an impact, even if damage is not noticeable. Suspension systems are offered as replacement parts and should be replaced when damaged or when excessive wear is noticed. It is not necessary to replace the entire hard hat when deterioration or tears of the suspension systems are noticed.

Some protective headgear allows for the use of various accessories to help employees deal with changing environmental conditions, such as slots for earmuffs, safety glasses, face shields and mounted lights. Optional brims may provide additional protection from the sun and some hats have channels that guide rainwater away from the face. Protective headgear accessories must not compromise the safety elements of the equipment.

## *Hard Hat Accessories*

### Faceshield Protection

Faceshield devices can be attached to the helmet without changing the helmet strength and electrical protection. A metal faceshield bracket system can be used on a Class G helmet; however, if a Class E helmet is to be used in an area where Class E protection is required, a type of bracket and shield system that will not conduct electricity (has a dielectric rating) should be used.

### Ear Muffs

The required degree of hearing protection should be considered prior to selecting ear muff attachments. If ear muffs are to be attached to helmets, metal attachments are acceptable for Class G helmets. Attachments with a dielectric rating must be used for Class E helmets.